REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

I. Claim Amendments

Claims 1-47 were pending in this application when examined.

Claim 1 has been amended to incorporate the subject matter of claim 3 by reciting "group R_1-A is a purine radical of formula (2)", as a result of which claim 3 has been cancelled. Claim 1 has also been amended to incorporate some of the definitions of R_2 and R_4 from claim 2 and some of the definitions of L_1 and L_2 from claim 2, as a result of which these features have been deleted from claim 2.

Claims 4-7, 12, 14, 15 and 20-22 have been amended to correspond with the amendments to claim 1.

Claims 8-11, 13, 16-19, 44 and 47 have been amended to make minor editorial changes, which are self-explanatory.

Claim 46 has been amended to recite "wherein energy can be transferred nonradiatively through dynamic or static quenching". Support for the amendment can be found on page 16, lines 2-5 of the specification.

The claim amendments are further discussed below in response to the rejections under 35 U.S.C. § 112, 2nd paragraph.

II. Claim Rejection for an Improper Markush Group

The Examiner rejects claims 1, 2 and 44-47 for being drawn to an improper Markush Group. The Examiner indicates that in order to overcome this rejection, variable "A" of formula (1) must be limited to purine.

Claim 1 has been amended to incorporate the subject matter of claim 3 by reciting "group R_1-A is a purine radical of formula (2)". Furthermore, claims 2, 4-7, 12, 14 and 15 have been amended to depend from claim 1, and claims 23-43 have been cancelled. Thus, the non-elected subject matter has been deleted from claims.

Applicants preserve their rights under 35 U.S.C. § 121 to file a divisional application for the non-elected subject matter.

III. Claim Rejections Under 35 U.S.C. § 102

A. Noell

The Examiner rejects claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Noell. As applied to the amended claims, Applicants respectfully traverse the rejection.

Noell discloses 9-alkyl-2-amino-6-purinethiols and corresponding 6-alkylthio derivatives. However, claim 1 recites "X is oxygen", and does not encompass compounds wherein X is sulfur.

Accordingly, claim 1 is not anticipated by the reference.

Claim 2 depends from claim 1, and thus also is not anticipated by the reference.

B. Baer

The Examiner rejects claims 1-3 under 35 U.S.C. §102(b) as being anticipated by Baer. As applied to the amended claims, Applicants respectfully traverse the rejection.

Baer discloses substituted 6-benzylthio-purines. However, claim 1 recites "X is oxygen", and does not encompass compounds wherein X is sulfur.

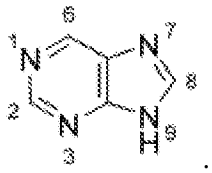
Accordingly, claim 1 is not anticipated by the reference.

Claim 2 depends from claim 1, and thus also is not anticipated by the reference.

C. Zheng

The Examiner rejects claims 1-4, 6-9, 12 and 14 under 35 U.S.C. §102(b) as being anticipated by Zheng. As applied to the amended claims, Applicants respectfully traverse the rejection.

A purine has the following numbered positions:



Zheng discloses radiolabeled O^6-benzylguanine derivatives, which carry an amino group resulting in a guanine structure and, optionally, **a benzyl group at the 9 position of the purine nucleus** (see e.g., pages 1243-44, compounds 1a-c in Schemes 1-2).

Amended claim 1 requires that the purine nucleus of formula (2), apart from the amino group substituent R_6 giving rise to a guanine, is further substituted by a group R_1 in the five-membered fused imidazole part of the purine nucleus (i.e., the positions indicated as R_7 or R_8 in formula (2), which correspond to positions 9 and 8, respectively, of purine). As amended, claim 1 recites that R_1 is restricted to a group $-R_2-L_2$ or a group R_5, wherein R_2 is a linker, L_2 is a label, and R_5 is cycloalkyl, cycloalkenyl or a heterocyclyl group. **However, R_1 cannot be a benzyl group in amended claim 1.**

Zheng's compounds only include the optional benzyl group in the 9 position of the purine nucleus, and the reference does not disclose R_1 as a group $-R_2-L_2$ or a group R_5, wherein R_2 is a linker, L_2 is a label, and R_5 is cycloalkyl, cycloalkenyl or a heterocyclyl group in the 8 or 9 positions of the purine nucleus.

Therefore, claim 1 is not anticipated by the reference.

Claims 2, 4, 6-9, 12 and 14 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference.

D. <u>Vaidyanathan</u>

The Examiner rejects claims 1-4, 6-9, 12 and 14 under 35 U.S.C. §102(b) as being anticipated by Vaidyanathan. As applied to the amended claims, Applicants respectfully traverse the rejection.

Similar to Zheng above, Vaidyanathan discloses radiolabeled O^6-benzylguanine derivatives. Vaidyanathan's compounds carry an amino group resulting in a guanine structure and, optionally, a **trimethylsilylethyloxymethyl group** at position 9 of the purine nucleus.

The trimethylsilylethyloxymethyl group of the reference does not qualify as a group $-R_2-L_2$ or R_5, as defined in amended claim 1.

Therefore, claim 1 is not anticipated by the reference.

Claims 2, 4, 6-9, 12 and 14 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference.

E. Baker

The Examiner rejects claims 1-4, 6-9, 12 and 14 under 35 U.S.C. §102(b) as being anticipated by Baker. As applied to the amended claims, Applicants respectfully traverse the rejection.

Baker discloses optionally substituted 2- or 8-benzylthio-hypoxanthines or -adenines. Claim 1 recites a compound of formula (1) R_1–A–X–CH_2–R_3–R_4–L_1. The "–X–CH_2–R_3–R_4–L_1" moiety of formula (1) is in the **6 position** of the purine radical of formula (2). On the other, Baker discloses OH or NH_2 in the 6 position of the purine nucleus (see page 653, Table I and page 655, Table II).

Accordingly, claim 1 is not anticipated by Baker.

Claims 2, 4, 6-9, 12 and 14 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference.

F. Damoiseaux

The Examiner rejects claims 1-4, 6-9, 12 and 14-16 under 35 U.S.C. §102(b) as being anticipated by Damoiseaux. As applied to the amended claims, Applicants respectfully traverse the rejection.

Damoiseaux describes O^6-benzylguanine derivatives carrying a sugar-type residue or such a residue incorporated into an oligonucleotide in position 9 of the purine nucleus (see page 285, col. 2, 1st full paragraph, lines 1-5, and Fig. 1 on page 286).

However, as discussed above, claim 1 requires that the purine nucleus of formula (2) is further substituted by a group R_1 in the five-membered fused imidazole part of the purine nucleus (i.e., the positions indicated as R_7 or R_8 in formula (2), which correspond to positions 9 and 8, respectively, of purine). As amended, claim 1 recites that R_1 is restricted to a group –R_2–L_2 or a group R_5, wherein R_2 is a linker, L_2 is a label, and R_5 is cycloalkyl, cycloalkenyl or a heterocyclyl group.

Accordingly, position 9 of the purine of formula (2) in claim 1 is not a sugar-type residue or such a residue incorporated into an oligonucleotide, as required in Damoiseaux.

Therefore, claim 1 is not anticipated by the reference.

Claims 2, 4, 6-9, 12 and 14-16 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference.

G. Keppler

The Examiner rejects claims 1-4, 6-9, 12 and 14-16 under 35 U.S.C. §102(b) as being anticipated by Keppler. As applied to the amended claims, Applicants respectfully traverse the rejection.

Keppler discloses the O^6-benzylguanine derivatives BGBT, BGAF and BGFL (see page 86, col. 2, "C"). BGBT, BGAF and BGFL do not include a substituent $-R_2-L_2$ or a group R_5, as defined in amended claim 1.

Accordingly, claim 1 is not anticipated by the reference.

Claims 2, 4, 6-9, 12 and 14-16 depend directly or indirectly from claim 1, and thus also are not anticipated by the reference.

IV. Double Patenting Rejection

The Examiner provisionally rejects claims 1-33 and 44-47 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2, 4, 5, 8-25 and 29-31 of copending Application No. 10/529,651. As applied to the amended claims, Applicants respectfully traverse the rejection.

Applicants take the position that the amended claims of the present application are patentably distinct from pending claims of the copending application. In claim 1 of the present application, the substituent R_1 on the purine must be a particular linker-label of $-R_2-L_2$ or a group R_5, wherein R_2 is a linker, L_2 is a label, and R_5 is cycloalkyl, cycloalkenyl or a heterocyclyl group.

On the other hand, in the copending application, the purine substituent R_1 must be hydrogen, halogen, trifluoromethyl, hydroxy, alkyl or a saccharide moiety, each of which are clearly different from $-R_2-L_2$ or a group R_5, as defined in claim 1 of the present application.

Accordingly, reconsideration and withdrawal of the provisional rejection are respectfully requested.

V. Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner rejects claims 1-22 and 44-47 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the claimed invention. As applied to the amended claims, Applicants respectfully traverse the rejection.

1. The Examiner asserts that R_3 is defined as having an "unsaturated alkyl or cycloalkyl…group with the double bond…", and states that an alkyl group and a cycloalkyl group cannot have a double bond. The Examiner suggests "alkenyl" or "cycloalkenyl".

Claim 1 has been amended to recite "1-alkenylene, 1-alkynylene or 1-cycloalkenylene" based on the definitions on page 12, lines 9-15 of the specification, and the fact that such groups are bifunctional, i.e. they are not only connected to CH_2 but also to R_4.

2-3. In item 2, the Examiner states that the term "label" is vague. In item 3, the Examiner states that the definition of "label" in claim 2 is unclear, because L is a moiety yet most of the choices are molecules.

In the amended claims, the term "label" is substantially restricted to the definitions in original claim 2, and further limited it to the exemplified labels on page 14, line 17 – page 15, line 19, and page 17, line 7 – page 18, line 2 of the specification.

"Molecule" has been replaced with "moiety", and "library" has been deleted. "A molecule that is suspected to interact with other molecules" has been replaced by "methotrexate" (see page 18, lines 6-15 of the specificaiton). Moreover, in claim 1, nucleic acid labels L_2 have been excluded based on page 15, lines 20-26 of the specification.

Accordingly, "label" is clearly defined such that one of ordinary skill in the art would understand the meets and bounds of the claimed invention.

4. The Examiner states that the term "linker" is unclear (R_2 and R_4). "Linker" has been substantially amended, based upon the definition disclosed on page 8, lines 1-19 of the specification. Accordingly, "linker" is clearly defined such that one of ordinary skill in the art would understand the meets and bounds of the claimed invention.

5. The Examiner states that "phenyl" should be changed to "phenylene" for R_3 in claim 2. The divalent groups of R_3 have been amended to use standard chemistry language, e.g. "phenylene". Moreover, the addition of "bridging" excludes any ambiguity in the definition of R_3 in claim 2, whenever the suffix "ene" is not appropriate.

6. The Examiner states that "1-alkenyl" does not make sense, because one does not know which direction the numbering system goes. The addition of "wherein the double or triple bond is connected to CH_2" resolves any alleged ambiguity in the claims.

7. The Examiner asks whether Applicants intend to recite a triple bond as an alternative for the definition of R_3 in claim 1, because "alkinyl" is recited in claim 2. The basis for the triple bond is found on page 12, lines 11-15 of the specification. Moreover, the heterocyclyl group has been amended to be an "unsaturated".

8-9. The Examiner rejects the definition of choice "(b)" of R_4 in claim 2. The Examiner also asserts that choice "(c)" has the same problem as choice (b) for the definition of R_4 in claim 2. As amended, the amide (and urea) function is encompassed, but an imide function is not encompassed. Moreover, the ester (and carbonate) function are encompassed, but the anhydride function is not encompassed.

10-11. The Examiner further rejects choice "(b)" of R_4 in claim 2, and further rejects choice "(c)" of R_4 in claim 2. The reference to the formula and the "amide" and "ester" have been deleted.

12. The Examiner rejects the term "interacting spectroscopic probes" in claim 46. Claim 46 has been amended to recite "wherein energy can be transferred nonradiatively through dynamic or static quenching", based on page 16, lines 2-5 of the specification.

13. The Examiner indicates that the negative limitation in (a) of claim 47 is unclear. The phrase "is not recognized by" has been replaced with "does not react with", based on page 20, lines 19-25 of the specification.

14. The Examiner states that the scope of AGT is unclear. Applicants take the position that "AGT" is clear to one of ordinary skill in the art based upon the teachings of the specification and the knowledge in the art. For example, see page 20, lines 7-18 of the specification.

15. The Examiner indicates that "mutant" AGT is unclear. Applicants take the position that "mutant AGT" is clear to one of ordinary skill in the art based upon the teachings of the specification and the knowledge in the art. A mutant enzyme is a wild-type enzyme having undergone a mutation. A "mutant AGT" is an AGT (not restricted to human wild-type AGT) that has undergone a mutation.

16-17. The Examiner asserts that the term "specific binding pair" in claim 20 is unclear. The Examiner also asserts that "part" of a specific binding pair is unclear. The "specific binding pair" has been replaced by the particular examples on page 16, lines 9-30 of the specification.

18. The Examiner states that "manipulating" in claim 31 is unclear, and asks how a protein can be "incorporated" into another fusion protein. Applicants assume that the objection is directed against claim 44, not claim 31. Applicants take the position that "manipulating" is clear, because this expression in the beginning part of the claim indicates a determination of what kind of method is claimed (i.e., "for detecting and/or manipulating a protein of interest"), rather than in the characterizing part of the claim (i.e., where the method steps are recited).

Manipulating is to be interpreted in its common meaning, e.g. as shown in the New Webster's Dictionary of the English Language, College Edition (1975) i.e., to handle, manage or use, especially with skill, in some process of treatment or performance.

Further, the expression "incorporated into an AGT fusion protein" has been replaced with "fused to an AGT", based upon page 19, line 21 – page 20, line 6 of the specification.

19. The Examiner states that claim 22 does not set forth a well defined group. Claim 22 has been amended to recite the labels exemplified on page 15, lines 3-19 of the specification.

20. The Examiner asserts that a "plurality" of labels in claim 2 is unclear, because the formula (presumably formula (1) of claim 1) shows only one L (presumably L_1). A person of ordinary skill in the art would understand that the "pluarality of labels" must be connected to R_4 in some way. In order to eliminate any ambiguity, claim 1 has been amended to recite "or polyvalent branched chain alkyl group" to the (bivalent) "alkylene" group.

21. The Examiner states that it is not clear where the list of labels for L_1 and L_2 in claim 2 ends. Claim 1 has been amended to clarify the definition of L_1 and L_2.

22. The Examiner indicates that "membrane-inserting" properties recited in claim 2 is unclear. The recitation "molecule with membrane-inserting properties" has been deleted and replaced with particular examples from page 15, lines 3-19 of the specification.

In view of the foregoing amendments and remarks, reconsideration and withdrawal of the §112 rejection are respectfully requested.

VI. Objection to the Specification

The Examiner objects to the specification, and requires a new abstract on a separate sheet from the specification. Although the present application was published with an abstract (US 2007/0243568), and the specification submitted to the USPTO includes a separate abstract on the first page of the published international application (WO 2005/085470), Applicants submit herewith a substitute abstract.

VII. Conclusion

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the applied references.

Therefore, in view of the foregoing amendments and remarks, it is submitted that the rejections set forth by the Examiner have been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Hughes JACCARD et al.

/Andrew B. Freistein/

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